

*KSC Safety Involvement with ELV Payloads Processed
at
Kennedy Space Center*



**NASA ELV PAYLOAD
SAFETY & MISSION
SUCCESS CONFERENCE**

ISS/Payload Processing
Safety Assurance Branch
Pam Hales

November 16-18, 2004

Santa Barbara, California

Agenda



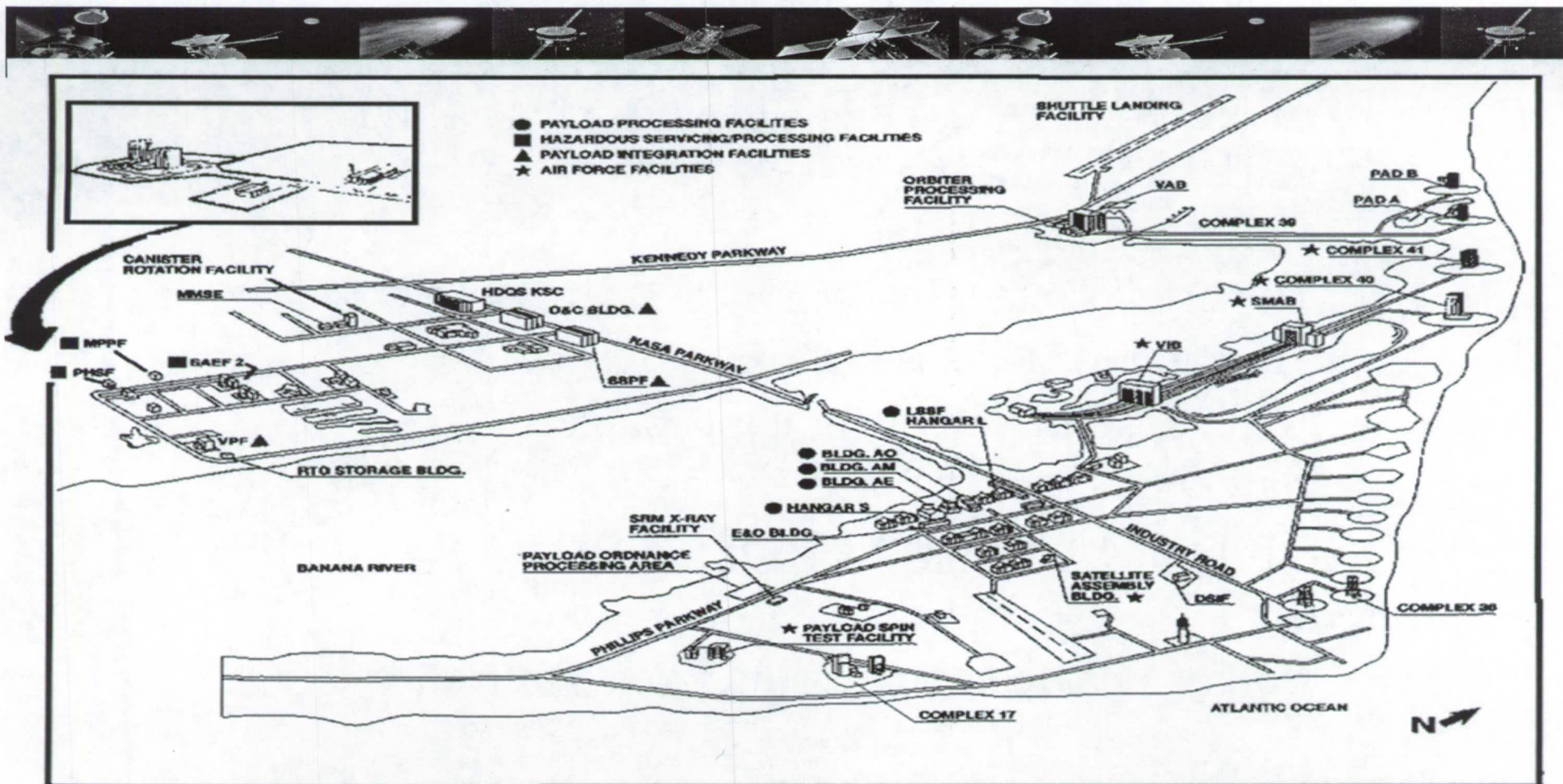
- KSC PAYLOAD PROCESSING FACILITIES
- PAYLOAD OPERATIONAL PROCEDURE REQUIREMENTS
- PAYLOAD PROCESSING OPERATIONS INFORMATION

KSC PAYLOAD PROCESSING FACILITIES

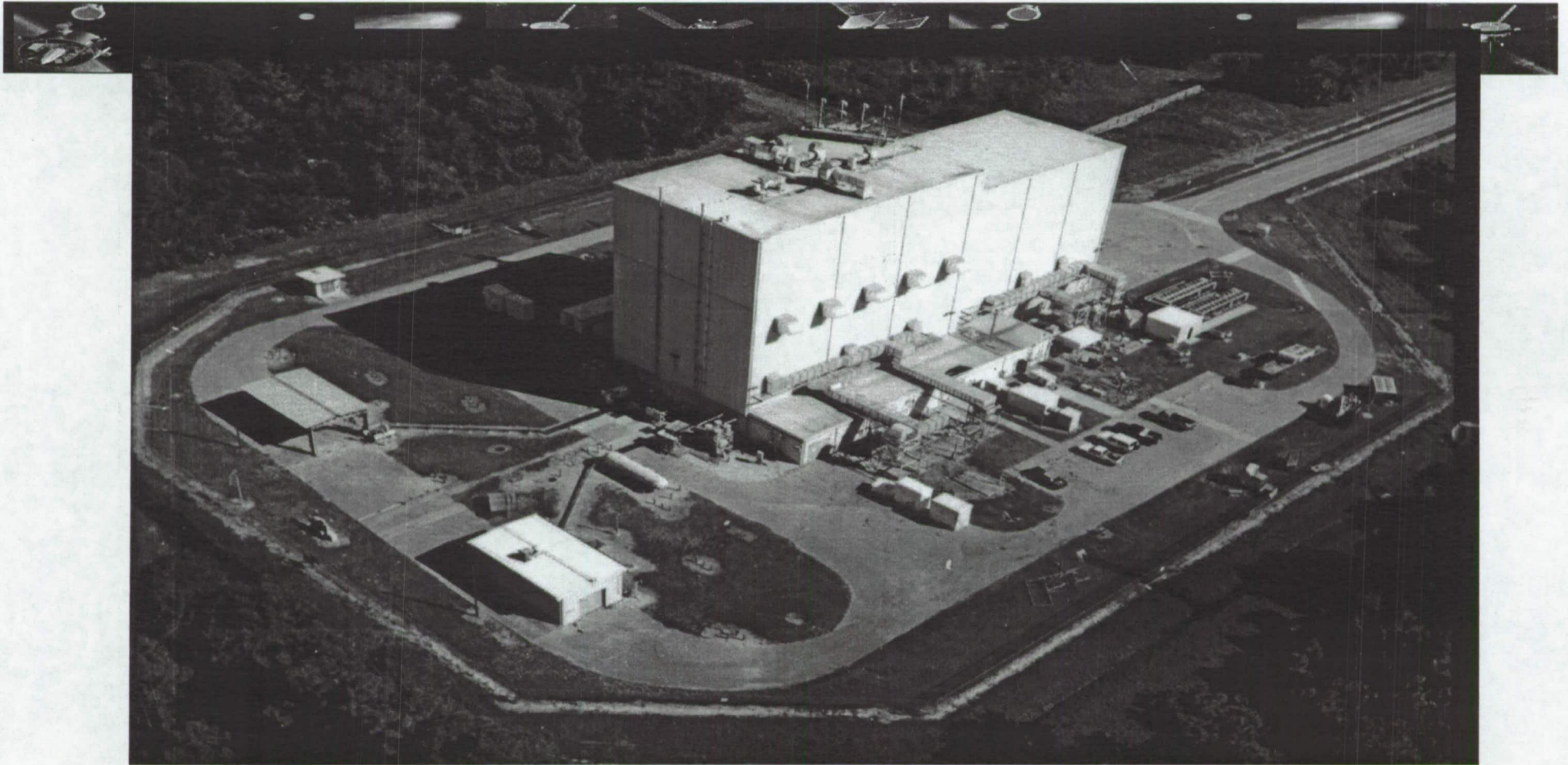


- PAYLOAD HAZARDOUS SERVICING FACILITY (PHSF)
 - Ordnance installation
 - Hypergol system loading
 - Hoisting loaded spacecraft
 - Mate to solid propellant upper stage
 - Safety Systems in place
- MULTI-PAYLOAD PROCESSING FACILITY (MPPF)
 - Solely a payload processing facility

KSC PAYLOAD PROCESSING FACILITIES



PHSF



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PAYLOAD OPERATIONAL PROCEDURE REQUIREMENTS



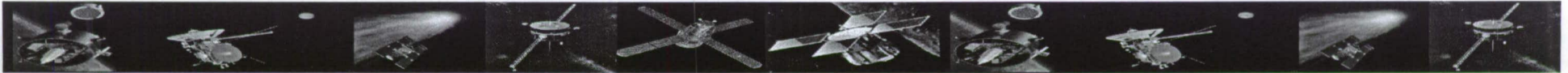
- REVIEWED TO KNPR 8715.3
 - Identifies which operations are considered hazardous
 - Specifies required procedural controls
 - Requires on-the-shelf time for hazardous procedures
 - Requires documentation of real time changes
 - ALSO REVIEWED TO VERIFY PROCEDURAL HAZARD CONTROLS IDENTIFIED IN MSPSP ARE PRESENT

PAYLOAD PROCESSING OPERATIONS INFORMATION



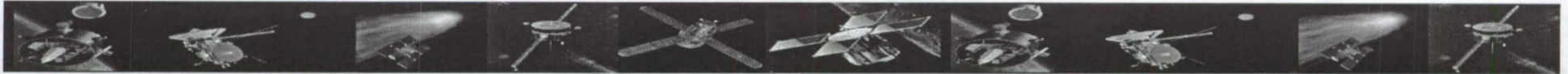
- KSC Safety attends daily test team meetings
- KSC Safety participates in hazardous operations
 - 24 hours advanced notice
 - Verify operational hazard controls identified in MSPSP are in place
 - Give final concurrence to proceed with hazardous operations

PAYLOAD PROCESSING OPERATIONS INFORMATION



- Interface with support entities during operation and in case of emergency
- Review and approve changes to planned operations
- Give concurrence to open control area when hazardous operations are complete

PAYLOAD PROCESSING OPERATIONS INFORMATION



- PAST ISSUES
 - Working under suspended load
 - Traceability of sling components after proofload
 - Control of plastics, foams, and adhesives
 - Control area discipline
 - Electrical equipment left powered up and unattended overnight in highbay

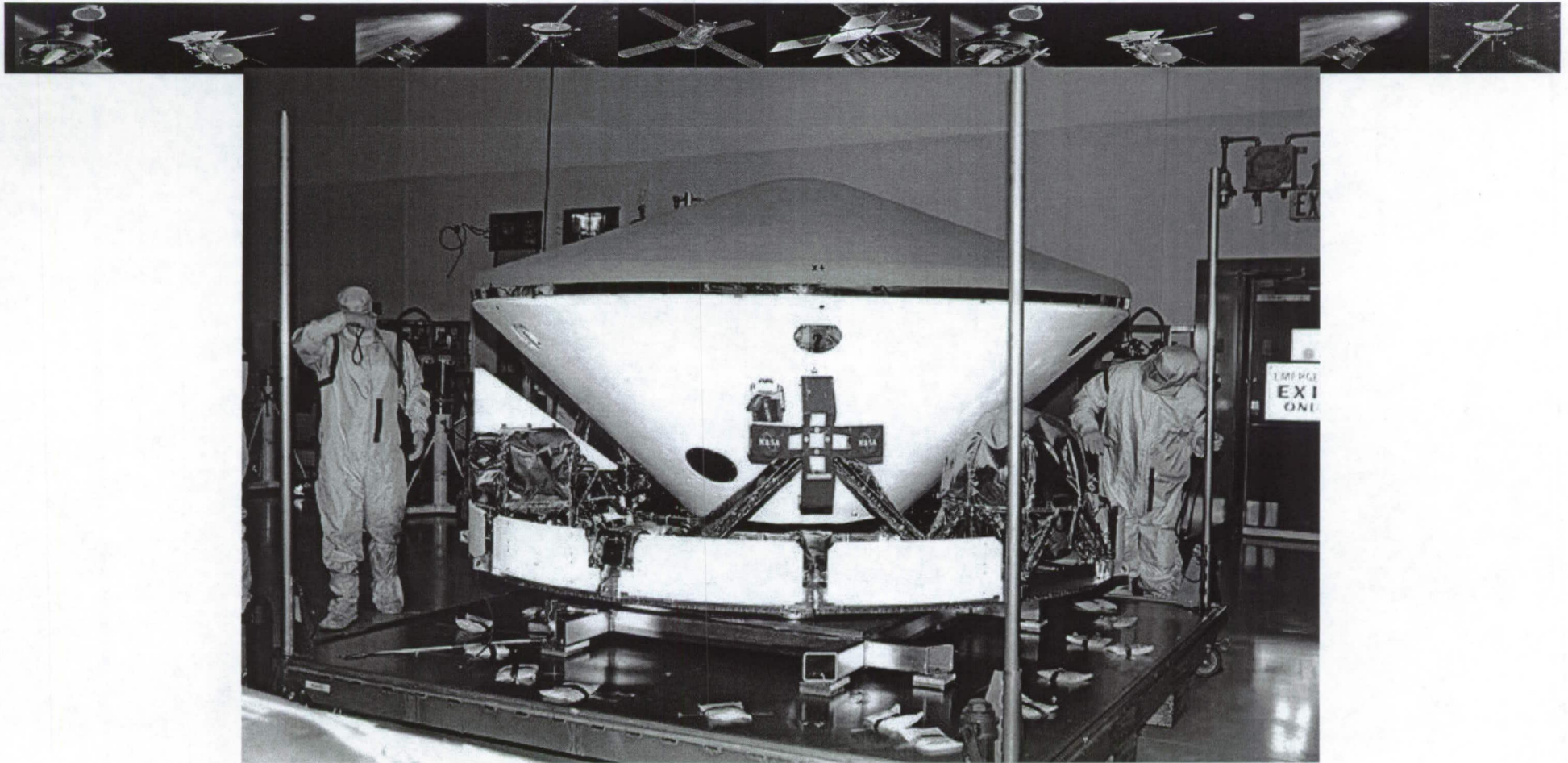
MER FLIGHT HARDWARE ARRIVAL



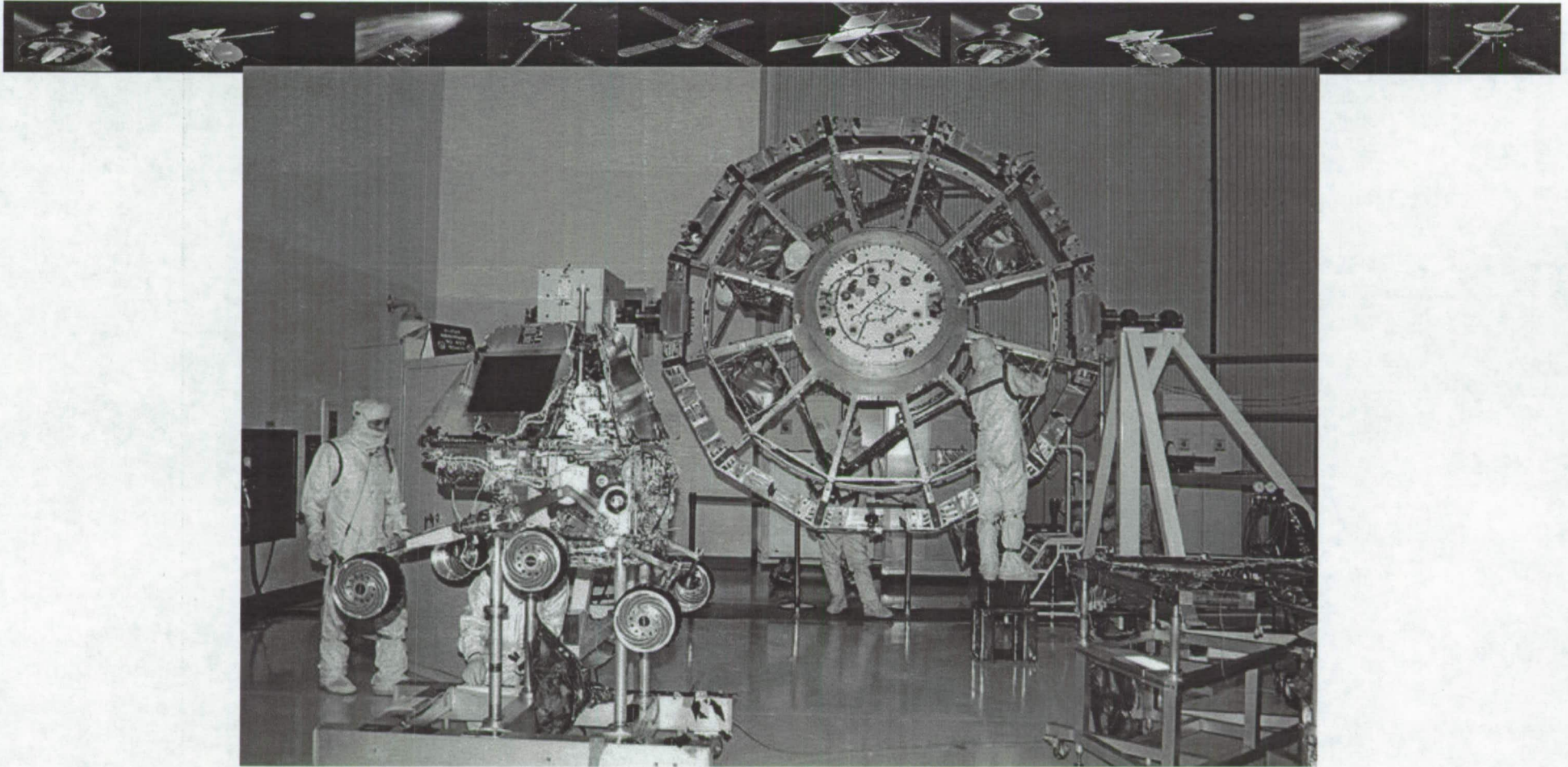
MER FLIGHT HARDWARE OFFLOAD



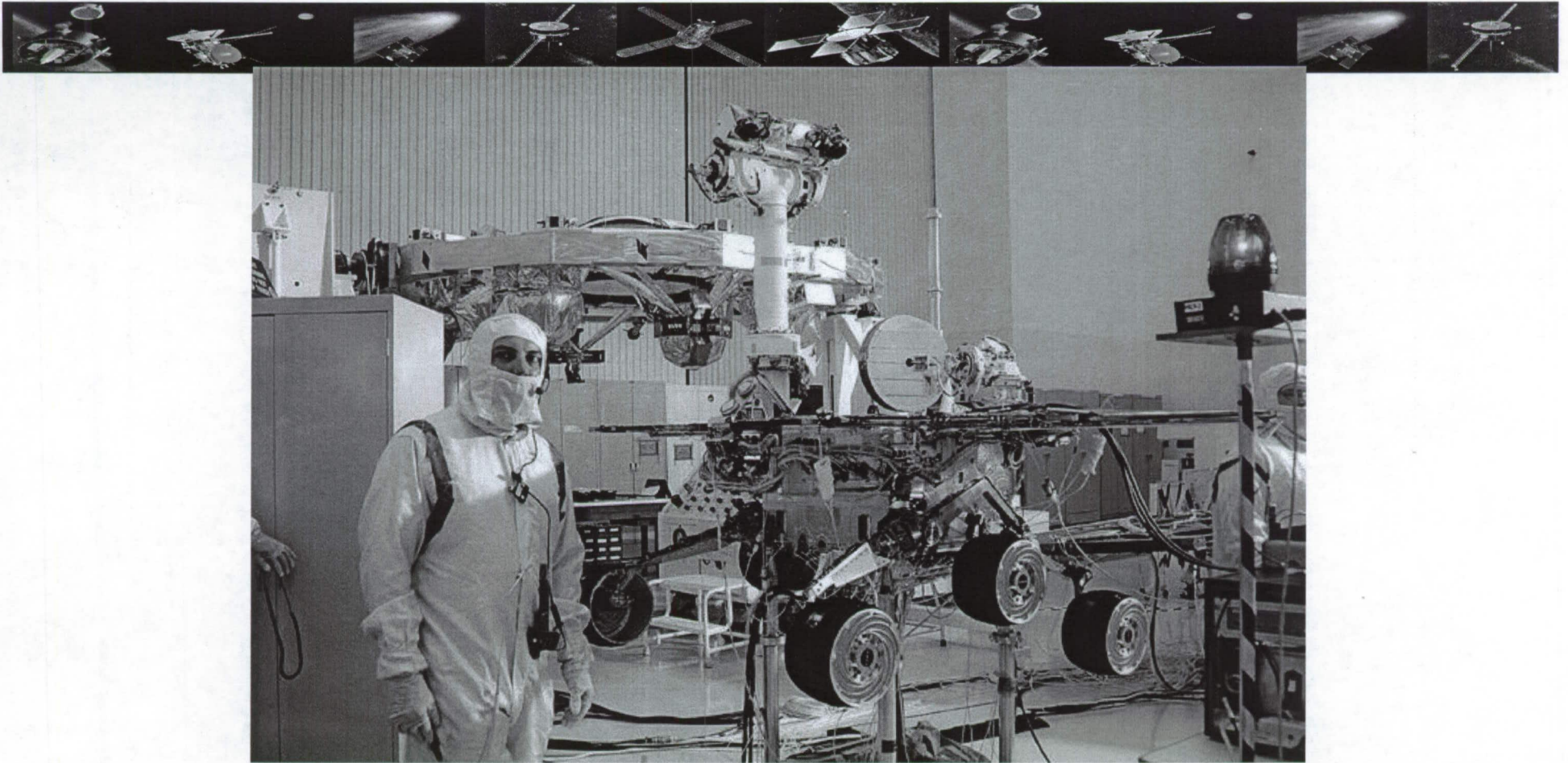
FLIGHT HARDWARE INSPECTION AFTER ARRIVAL



MER ROVER AND CRUISE STAGE IN PHSF

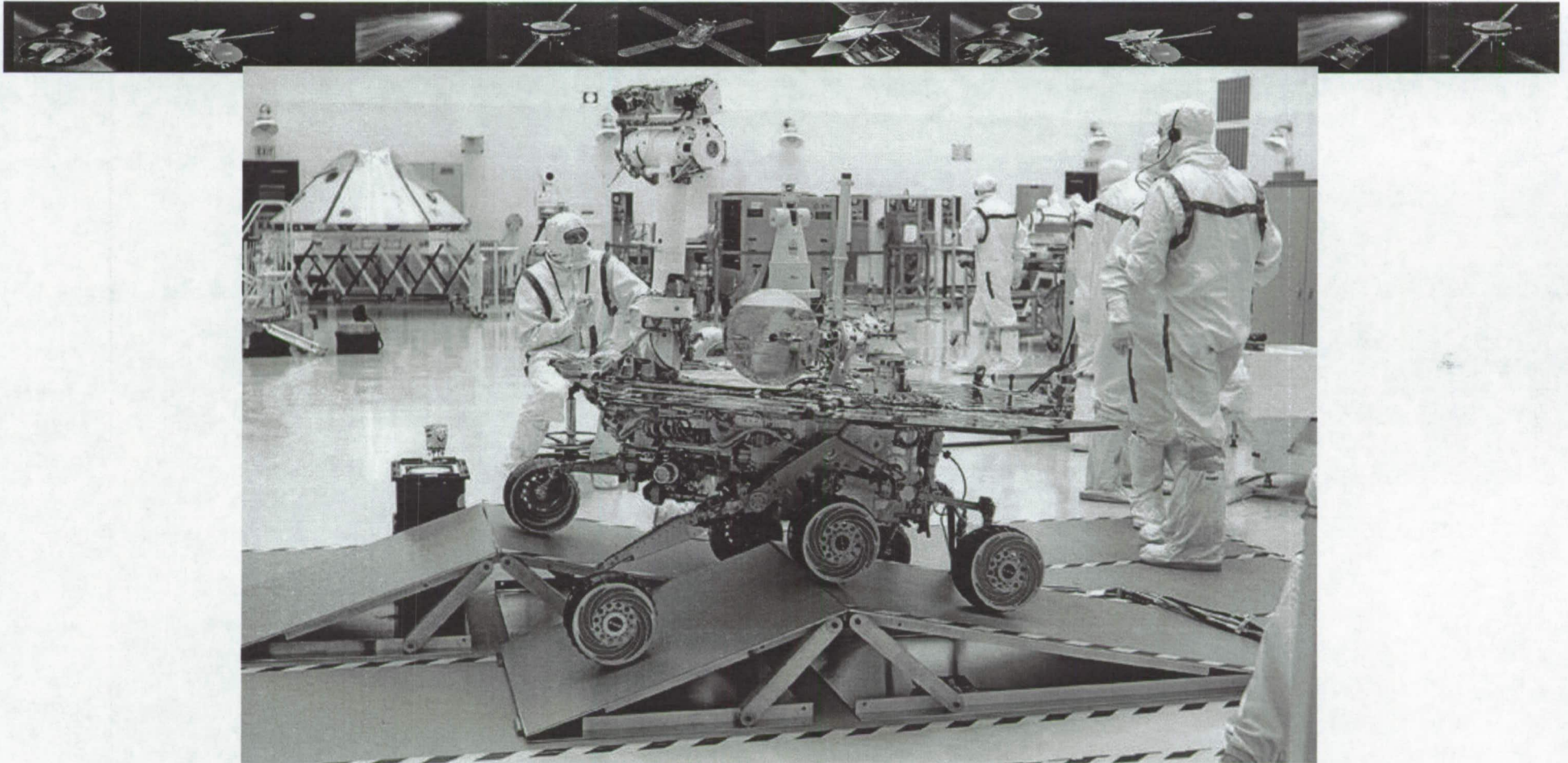


MER ROVER CHECKOUT IN PHSF

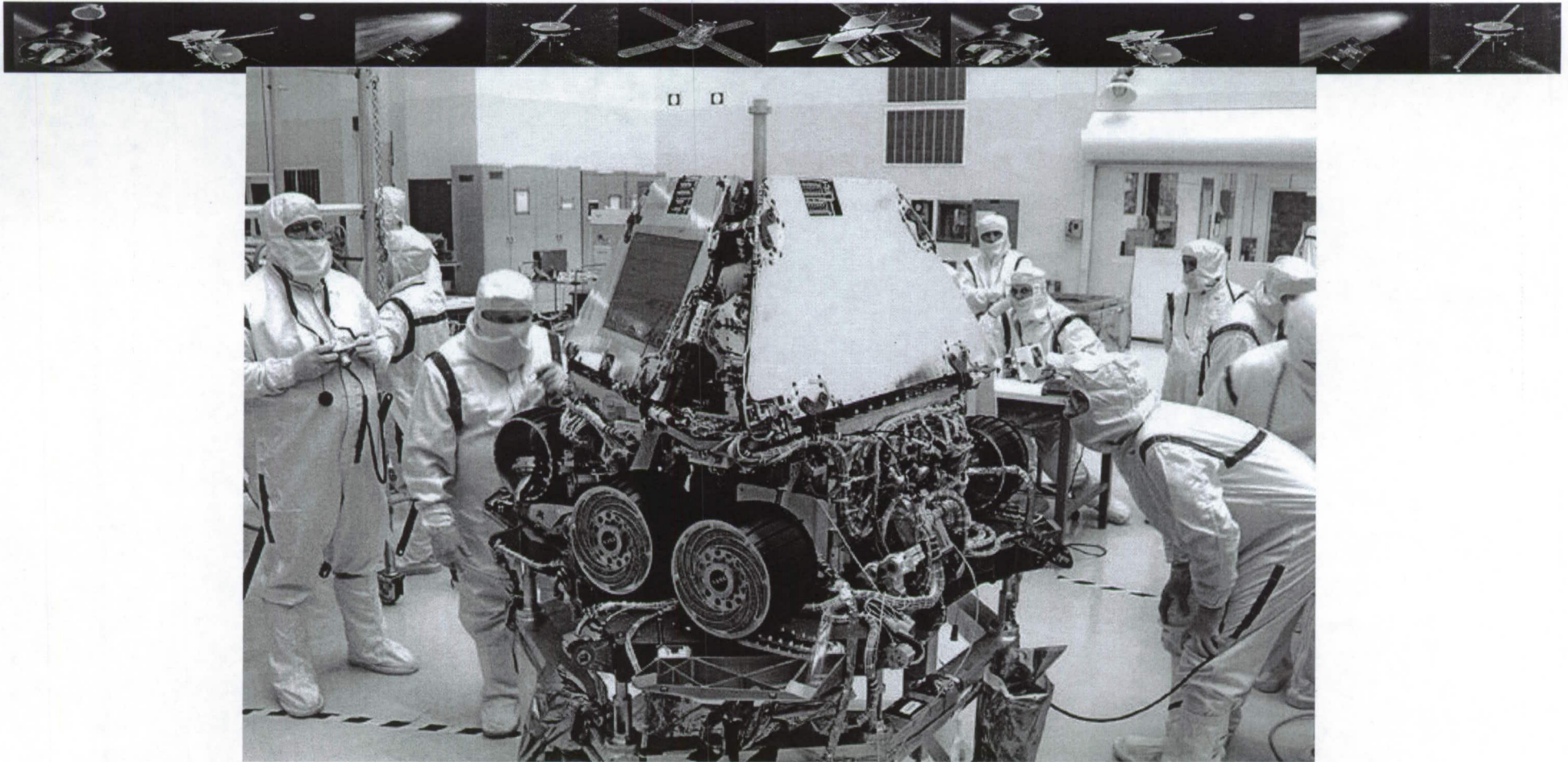


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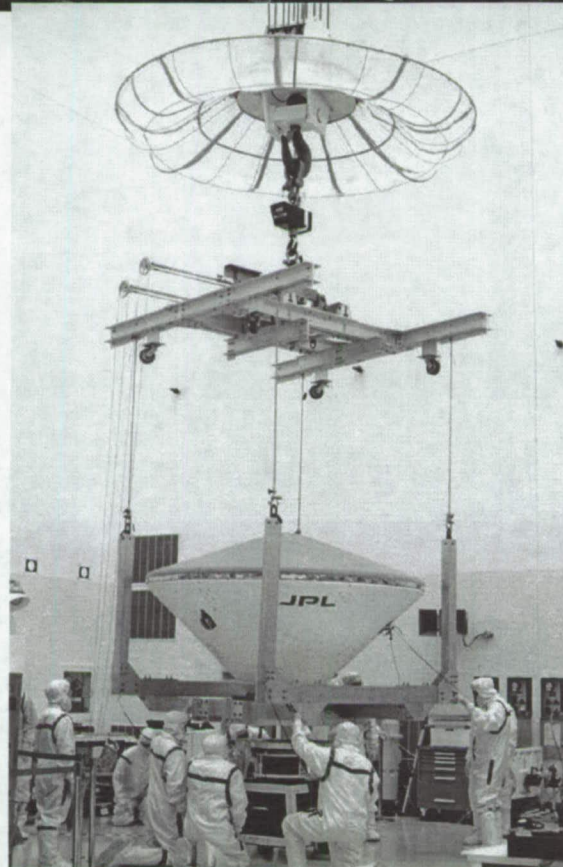
MER ROVER MOBILITY & MANEUVERABILITY TESTING



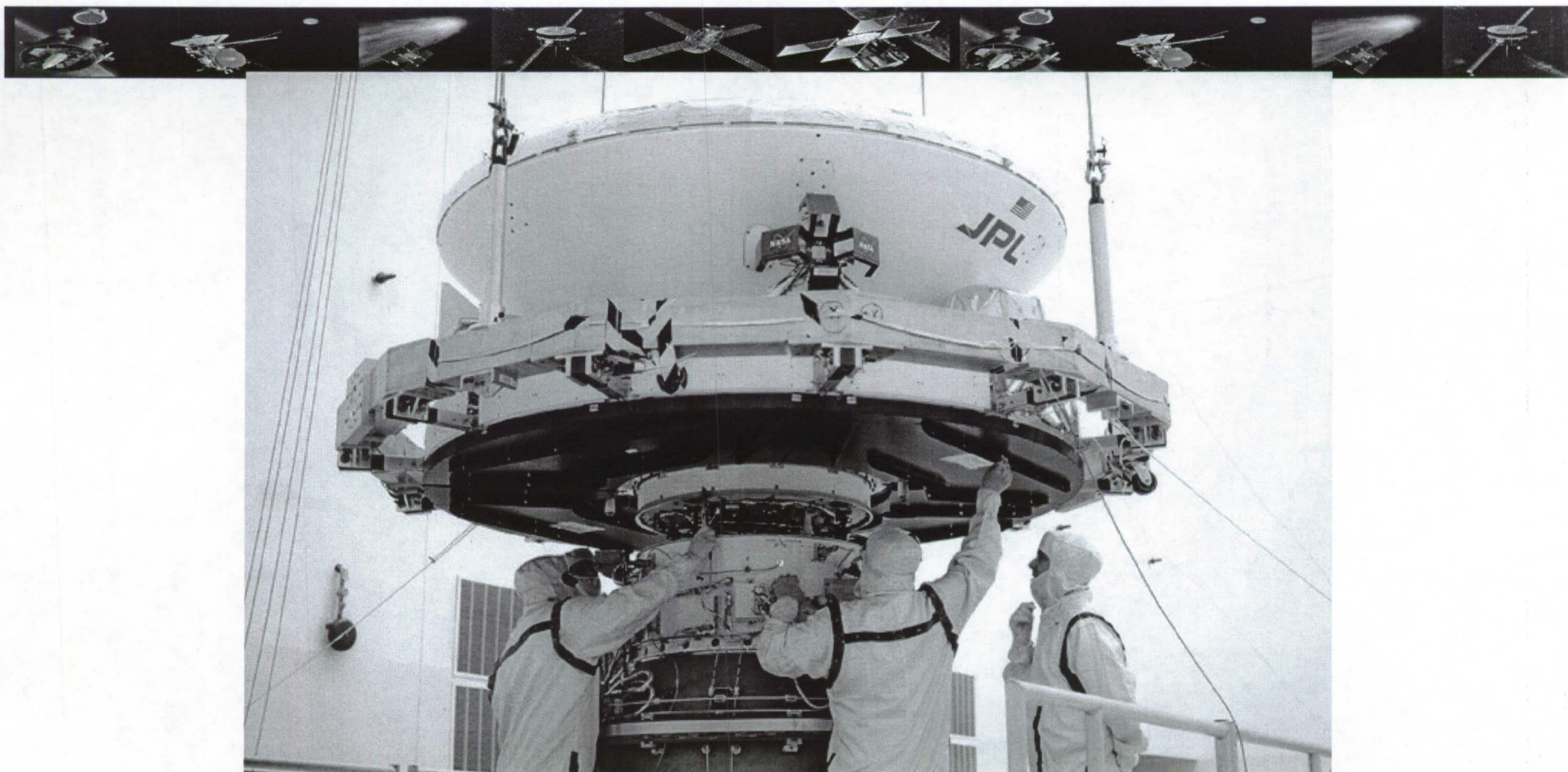
MER PREPARING FOR FLIGHT STOW



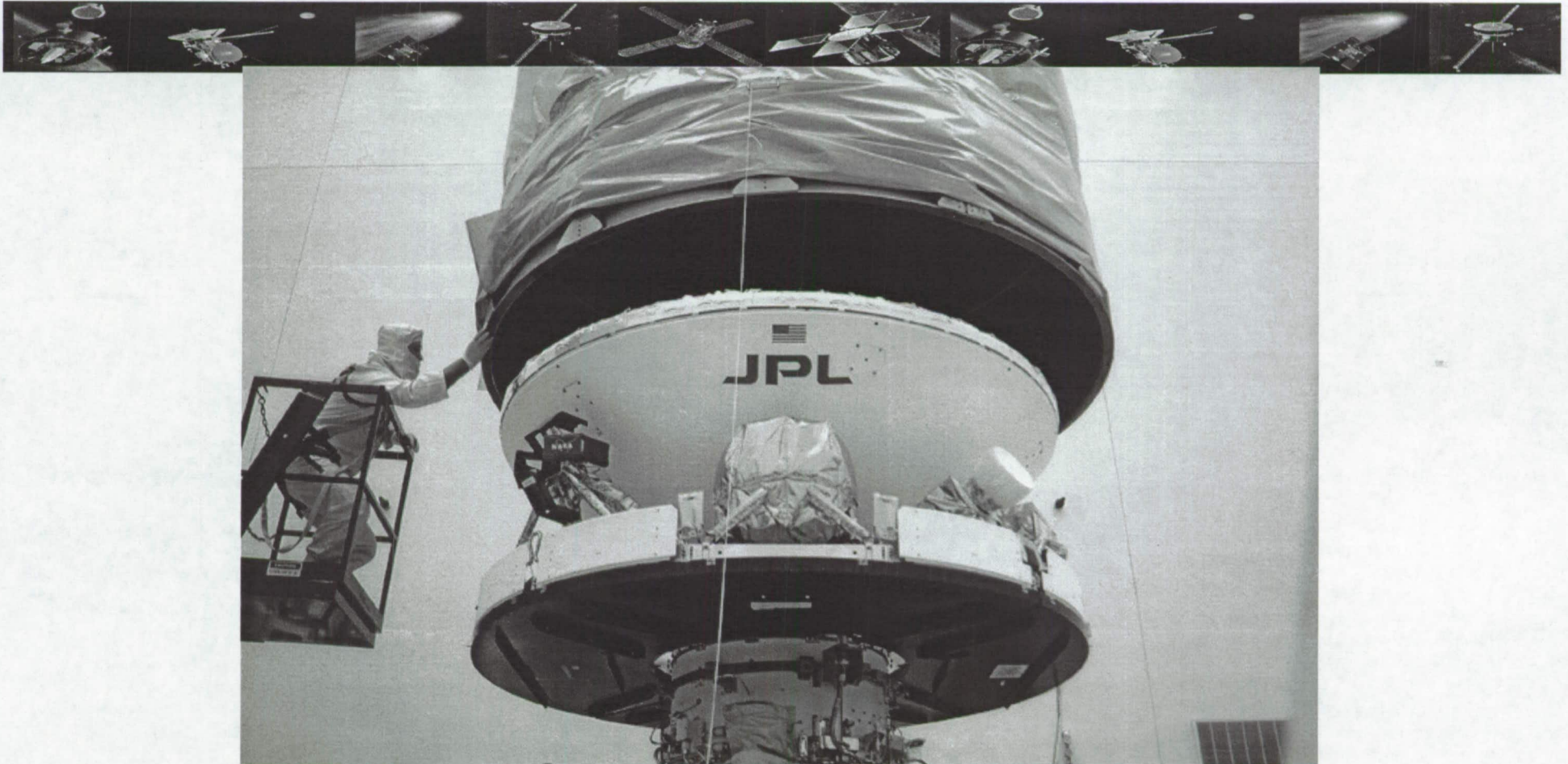
HOISTING ENTRY VEHICLE TO SPIN TABLE



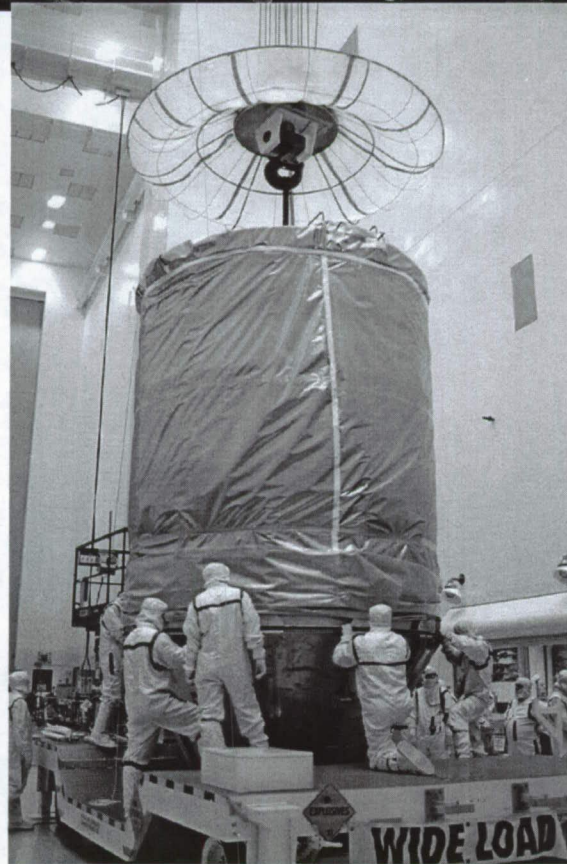
MER MATE TO DELTA II THIRD STAGE



MER ENCAPSULATION



MER ENCAPSULATION COMPLETE



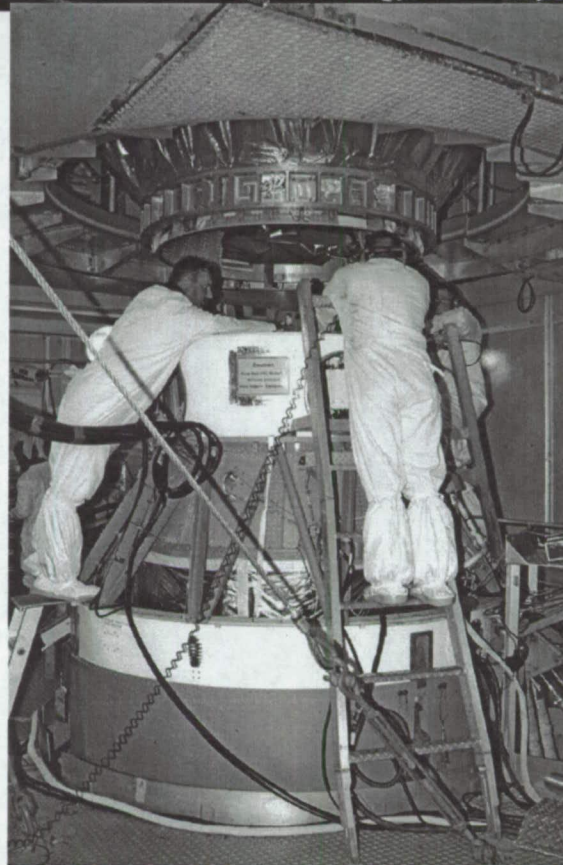
MER INSIDE TRANSPORT CANISTER TRANSFER TO PAD



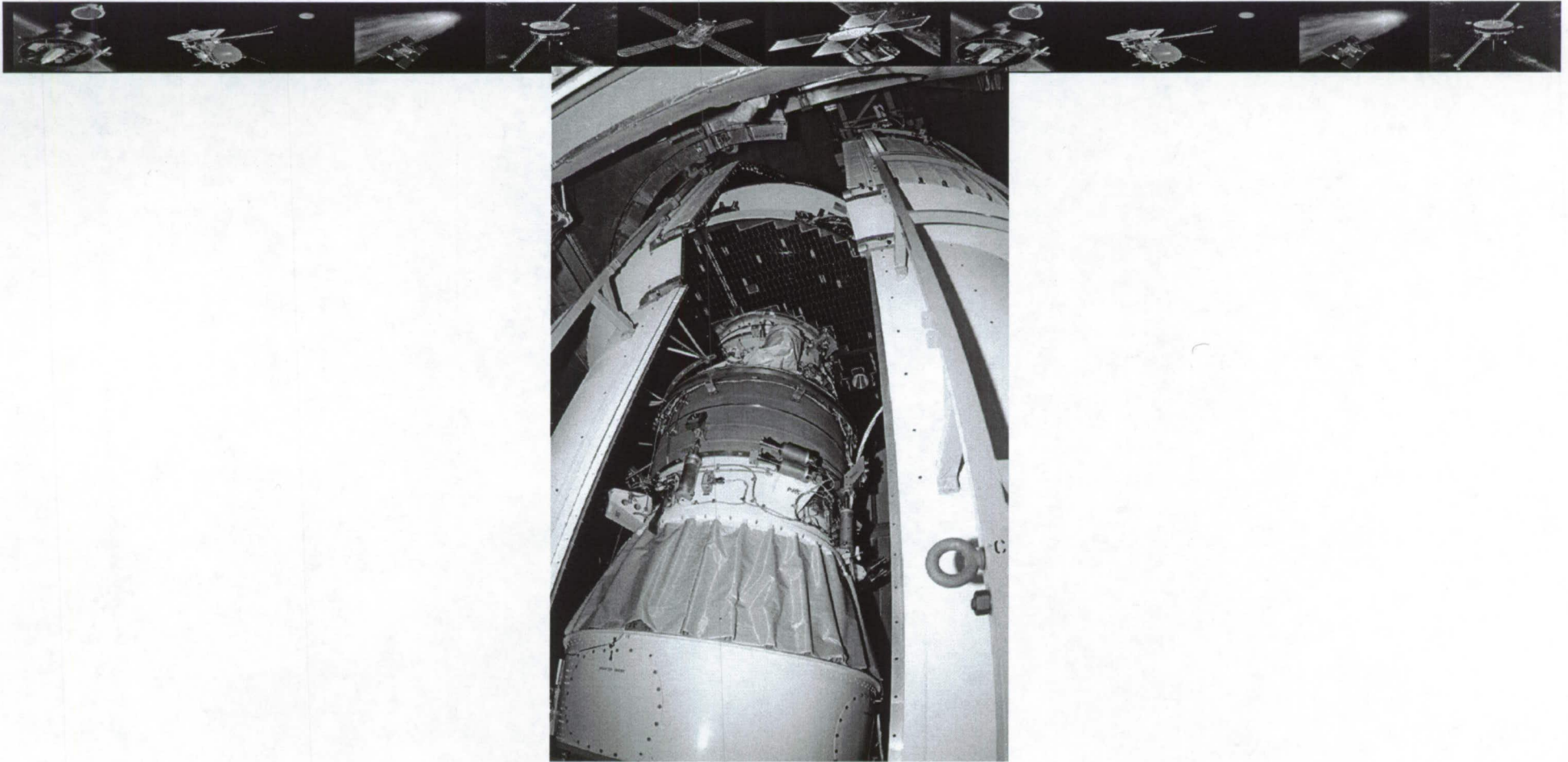
MER HOIST AT PAD 17



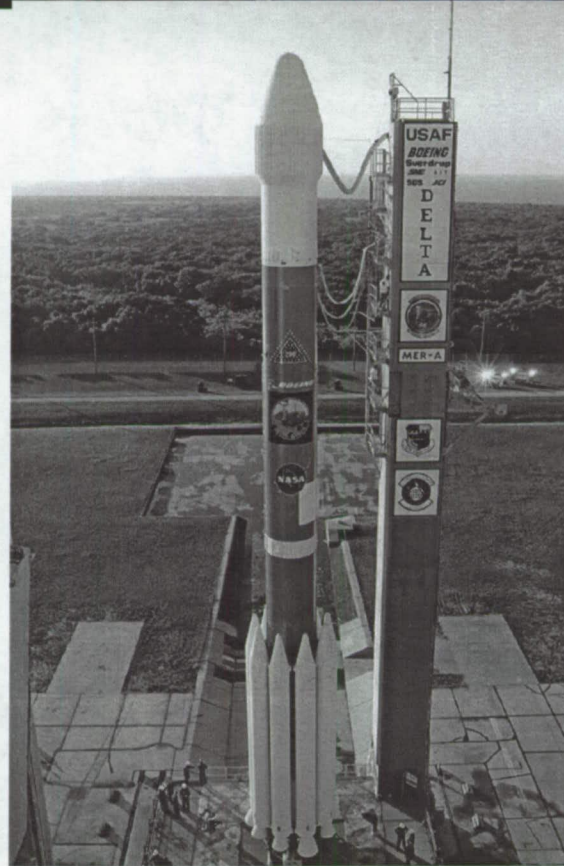
MER MATE TO DELTA II SECOND STAGE AT PAD



FAIRING INSTALLATION AT PAD 17



MER MISSION READY FOR LAUNCH



MER/DELTA II LIFTOFF

